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Pollock Vande Sande & Priddy
PO BOX 19088
Washington, DC 20036

EXAMINER

POE, MICHAEL I

ART UNIT

PAPER NUMBER

1732

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/534,987

Applicant(s)

JEAN-YVES, ROMPAY

Examiner

Michael I Poe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Amendments

1. Applicant's amendment A filed on March 27, 2000 has been entered. Based upon the entry of this amendment, existing claims 3, 4, 6-9, 11, 13 and 14 have been amended, no existing claims have been canceled, and new claims 16-20 have been added. Claims 1-20 are currently pending.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8 and 16-20, drawn to a method for constructing infrastructures, classified in class 264, subclass 31.
- II. Claims 9-15, drawn to an additive for the construction of infrastructures, classified in class 106, subclass 715.

3. The inventions are distinct, each from the other because of the following reasons:

Inventions of Group II and Group I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the additive could be used in a materially different process such as a process for making precast infrastructure rather than in-situ infrastructure.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with applicant's attorney Burton Amernick on November 8, 2001, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8 and 16-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-15 are

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withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

7. The information disclosure statement filed on June 15, 2000 (Paper #4) is a duplicate of the information disclosure statement filed on March 27, 2000 (Paper #2). Since the references listed in the PTO-1449 of the information disclosure statement filed on June 15, 2000 have been considered as part of the information disclosure statement filed on March 27, 2000, the references listed in the PTO-1449 of the information disclosure statement filed on June 15, 2000 have lined out as not being considered.

Specification

8. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

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In the instant case, the abstract is two paragraphs and contains phrases that can be implied (e.g., the invention relates to). The abstract should be amended in response to this Office action to correct these deficiencies.

9. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC

(See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

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(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 2, 4, 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,230,103 (Minnick) in view of U.S. Patent No. 3,398,662 (Takata et al.).

Claims 1, 2, 4, 8 and 17

Minnick teaches a method of forming a road base and base layers for other uses such as parking lots, airport runways and the like (process for constructing infrastructures) including forming an admixture (i.e., a ready-prepared additive) of lime (i.e., an activator), finely divided blast furnace slag (i.e., dry ground vitrified slag) and fly ash and combining the admixture (i.e., a ready-prepared additive) and coarse particles of blast furnace slag (i.e., a particulate slag; an unpreground as-granulated or as-pelletized slag is used as the particulate slag added to the aggregates) with inert aggregate in the presence of water to form a composition for a road base or base layer (aggregates, vitrified blast-furnace slag, a pulverulent activator and water are mixed together; a particulate slag and a ready-prepared additive are added to the aggregate) (column 1, lines 10-26; column 3, lines 5-12 and 38-65; column 7, lines 27-35 and 67-73). Minnick further teaches that the blast furnace slag for the admixture is converted to a useful form by grinding or pulverizing to extremely fine particles where at least about 70% by weight of which passes through a standard 325 mesh screen (dry ground vitrified slag having a particle size of less than 500 μm)

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(column 3, lines 5-12). Note that the fly ash of the admixture would not serve as an activator; therefore, the only activator present in the process of Minnick is lime (e.g., the activator consists, for more than 95% by weight, of lime, calcium sulphate or a mixture of lime and calcium sulphate).

Although Minnick teaches the basic claimed process, Minnick does not specifically teach how the road base or base layer is formed using the composition (e.g., mix is spread out over the ground, compacted and left to harden). However, Takata et al. teach a soil-cement stabilization process to build a base course for a roadway including shaping, crowning and grading the existing ground surface; spreading a layer of Portland cement over the entire area to be stabilized; mixing cement, soil and water with suitable ground penetrating equipment; compacting the area; allowing the cement to harden as it hydrates (column 1, lines 46-63). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use the process of forming a base course of a roadway taught by Takata et al. as the method for forming the road base or base layer in the process of Minnick to provide a reliable and cost-effective method of forming the road base or base layer in the process of Minnick.

With regard to claim 8, Minnick further teaches the admixture comprises between 2 and 40% by weight lime, between 2 and 40% by weight slag and between 50 and 90% by weight fly ash and that the lime plus the slag makes up 1 to 9% by weight of the composition [an amount of additive of between 1 and 3% by weight with respect to the total of the mix (aggregates/slag/additive/water) is added to said mix] (column 3, lines 37-65).

12. Claims 3, 6, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,230,103 (Minnick) in view of U.S. Patent No. 3,398,662 (Takata et al.) and U.S. Patent No. 5,351,894 (Longhurst et al.).

Claims 3, 6, 16 and 18

The discussion of Minnick and Takata et al. as applied to claims 1 and 2 above applies herein.

Minnick in view of Takata et al. does not specifically teach that moisture content of the dry ground slag and the activator should be less than 0.5% by weight. However, Longhurst et al. teach a method of the comminution of brittle materials for grinding such as vitreous grains of blast furnace slag including

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setting the material for grinding to a mixed moisture content of approximately 0.3 to 3.0% (the dry ground slag has a water content less than 0.5% by weight; the activator has a moisture content of less than 0.5% by weight) (column 1, lines 43-68; abstract). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to provide the slag and the activator in the process of Minnick in view of Takata et al. with a moisture content in the claimed range as taught by Longhurst et al. to prevent sticking and/or caking of the slag and the activator during grinding (see specifically column 1, lines 11-32 of Longhurst et al.).

With regard to the activator having an average particle size of between 0 and 500 μm , Minnick further teaches that the activator is ground with the slag to achieve a particle distribution wherein at least about 70% by weight of which passes through a standard 325 mesh screen (e.g., the activator has an average particle size of between 0 and 500 μm).

With regard to claim 18, as discussed above, the fly ash of the admixture would not serve as an activator; therefore, the only activator present in the process of Minnick is lime (e.g., the activator consists, for more than 95% by weight, of lime, calcium sulphate or a mixture of lime and calcium sulphate).

13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,230,103 (Minnick) in view of U.S. Patent No. 3,398,662 (Takata et al.) and U.S. Patent No. 4,715,896 (Berry).

Claim 5

The discussion of Minnick and Takata et al. as applied to claim 4 above applies herein.

Minnick in view of Takata et al. does not specifically teach that the activator contains sodium or potassium hydroxide. However, Berry teaches a cementitious binder for consolidated fill comprising about 55 to 97 parts by weight of finely divided water hardenable cementitious iron blast furnace slag, about 3 to about 45 parts by weight of Class C fly ash and an alkaline activator selected from the group consisting of strongly basic alkali metal and alkaline metal hydroxides wherein the alkali metal hydroxides include lithium, sodium, potassium, rubidium, etc. hydroxides (the activator contains sodium or potassium hydroxide) (column 3, lines 5-9; abstract). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use

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an alkali metal hydroxide as part of the activator in the process of Minnick in view of Takata et al. as taught by Berry to provide a composition having a significantly greater 28-day strength (see specifically column 1, lines 30-38 of Berry).

14. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,230,103 (Minnick) in view of U.S. Patent No. 3,398,662 (Takata et al.) and U.S. Patent No. 3,565,648 (Mori et al.).

Claims 7 and 20

The discussion of Minnick and Takata et al. as applied to claims 1 and 2 above applies herein.

Minnick in view of Takata et al. does not specifically teach that additive consist of a mixture having 25 to 45% calcium sulphate, 2 to 6 % lime and the remainder up to 100% dry ground vitrified slag. However, Mori et al. teach a method of utilizing blast furnace slag as a strength-improving agent for hardened cement including blending water, gypsum (i.e., calcium sulphate) and blast furnace quenched slag (i.e., dry ground vitrified slag) to form a slurry; placing the slurry in a rotary ball mill, a vibrating ball mill or the like to be sufficiently ground so as to cause the alumina and calcium sulphate to come in contact and react with each other; adding calcium hydroxide or calcium oxide (i.e., lime) to the ground slurry for accelerating the reaction of the alumina and the calcium sulphate; and adding the mixture of slag, gypsum and calcium hydroxide/oxide to a cement mix to form a cement composition (column 1, line 67 – column 2, line 7; column 2, lines 36-55; column 2, line 69 – column 3, line 2). Mori et al. further teaches that the mixture of slag, gypsum and calcium hydroxide/oxide (i.e., the additive) comprises about 50 to 90% slag (qsp 100% dry ground vitrified slag), about 5 to 50% gypsum (25 to 45% calcium sulphate) and about 0 to 50% calcium hydroxide/oxide (2 to 6% lime) (column 2, lines 8-19 and 36-55). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use the additive composition taught by Mori et al. in the process of Minnick in view of Takata et al. to provide a composition having increase strength as taught by Mori et al.

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15. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. 3,230,103 (Minnick) in view of U.S. Patent No. 3,398,662 (Takata et al.), U.S. Patent No. 5,351,894 (Longhurst et al.) and U.S. Patent No. 4,715,896 (Berry).

Claim 19

The discussion of Minnick, Takata et al. and Berry as applied to claim 5 above applies herein.

Minnick in view of Takata et al. and Berry does not specifically teach that moisture content of the activator should be less than 0.5% by weight. However, Longhurst et al. teach a method of the comminution of brittle materials for grinding such as vitreous grains of blast furnace slag including setting the material for grinding to a mixed moisture content of approximately 0.3 to 3.0% (the activator has a moisture content of less than 0.5% by weight) (column 1, lines 43-68; abstract). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to provide the activator in the process of Minnick in view of Takata et al. and Berry with a moisture content in the claimed range as taught by Longhurst et al. to prevent sticking and/or caking of the activator during grinding (see specifically column 1, lines 11-32 of Longhurst et al.).

With regard to the activator having an average particle size of between 0 and 500 μm , Minnick further teaches that the activator is ground with the slag to achieve a particle distribution wherein at least about 70% by weight of which passes through a standard 325 mesh screen (e.g., the activator has an average particle size of between 0 and 500 μm).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 2,937,581 (Havelin et al.), U.S. Patent No. 3,096,188 (Maydl), U.S. Patent No. 3,501,323 (Moorehead), U.S. Patent No. 4,038,095 (Nicholson), U.S. Patent No. 5,766,297 (Piniecki), Japanese Patent Publication No. 55-155086 A (Yamamoto et al.), European Patent Application No. 0,188,618 A1 (Eun et al.) and Japanese Patent Publication No. 02-266005 A (Hiroaki et al.) have been cited of interest to show the state of the art at the time the invention was made.

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17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael I Poe whose telephone number is (703) 306-9170. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianne can be reached on (703) 305-5493. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1234.



Michael Poe/mip



MICHAEL COLAIANNI
PRIMARY EXAMINER